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ABSTRACT

Great Themes of Space Science Fiction: Reality or Fantasy

In the twentieth century, visionary science fiction writers imagined futures for humankind and the universe that transported readers into exciting new worlds and assumed astonishing technological development. Which of these concepts are likely to be actually realized in the not too distant future? Which seem unattainable without some new physics or new technological advances far beyond those that have yet been conceived?

Robotic exploration of the solar system is now a fait accompli. Will human exploration and colonization follow? If so, on what time scale and at what price? Will our spacecraft become interstellar explorers? Will humans, even with cryogenic freezing or seed pods containing zygotes, leave our solar system to seek out new Earths orbiting other stars? Is our manifest destiny as a species to spread throughout our galaxy, harvest the power of the sun, and come to dominate worlds numbering in the millions?

The science fiction literature is replete with human interaction with intelligent extraterrestrials. Is this just wishful thinking, or does there exist a real scientific basis for the assertion that homo sapiens is really not alone (or nearly alone) in the universe? What technological developments will greatly accelerate the likelihood that we will make contact in the next few centuries?

Space science and space engineering stand on the backs of the visions created by the science fiction writers. Some of those visions are plausible. Others are not. But all of these feasts of the imagination uplift our souls and catalyze human intelligence.